

RESIDENTIAL DECK HANDOUT

(Revised 12/12/2013)

SUBMITTALS REQUIRED FOR PERMIT

1. Signed completed Building Permit application form.
2. Two (2) copies of a Certificate of Survey, drawn to scale indicating the lot dimensions, The location and ground coverage area of existing structure(s), the location and area of the proposed structure. Indicate the setback from property lines. A Certificate of Survey for the property may be on file at City hall.
3. Two (2) Copies of plans showing proposed designs and materials. **Plans shall include the following information:**
 - A. Floor plan indicating the following;
 - a. Proposed deck size,
 - b. Size and spacing of floor joists and beams,
 - c. Size, species and direction (perpendicular/diagonal) of decking material,
 - d. Size, location and spacing of posts,
 - e. Species and grade of lumber to be used.
 - B. Elevations indicating the following;
 - a. Height of structure from established grade,
 - b. Diameter and depth of footings,
 - c. Guard rail height (if required)
 - d. Type and spacing of intermediate rails,
 - e. Stairs (location and size).

GENERAL BUILDING CODE REQUIREMENTS:

1. Footing shall be designed and constructed below frost depth (42" minimum ground cover required from bottom of footing to grade or side slope).
2. Approved wood of natural resistance to decay or treated wood (min.40 penetration) shall be used. Other man made products shall be listed and have an evaluation report.
3. Guardrails shall be provided a minimum thirty-six (36) inches above the finished deck boards for decks more than thirty (30) inches above grade. Guards are required on open sides of stairways, raised floor areas, balconies and porches and shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 inches (102mm) in diameter. Open sides of stairs with a total rise of more than thirty (30) inches above the floor or grade below shall be protected by guardrails not less than 34 inches in height, measured from the nosing of the treads vertically from the nosing of the treads and the hand rail shall be positioned 34"-38"
4. Post spacing for railings shall be no greater than six (6') apart, using full 4x4 posts extending to the bottom of the rim board. Two ½ inch diameter minimum carriage bolts with 1" washers on both sides are required per post. Additional backing, support and fastening is required at post locations to prevent the rim board from pulling away from the attached joists. **NOTCHING OF GUARD POSTS PROHIBITED**
5. Open risers on stairs are permitted, provided that the openings between treads do not permit the passage of a 4-inch diameter sphere. The opening is not limited for stairs with a total rise of 30 inches or less.
6. The triangular opening(s) formed by the riser, tread and bottom rail of a guard at the open side of a stairway is permitted to be of such size that a sphere 6-inches in diameter cannot pass through.
7. Floor joist and stair stringers spaced at twenty-four (24) inches on center requires a minimum (2) inch nominal thickness decking. Floor joist or stair stringers spaced sixteen (16) inches o/c may use 5/4 – inch minimum decking. 5/4- inch decking when installed diagonally shall be fastened to joist that are 12" on center.
8. Decks shall be capable of supporting a forty (40) pound per square foot live load and a ten (10) pound per square foot dead load for a total load of fifty (50) pounds per square foot.
9. Non-corrosive metal flashing is required at deck ledger attached to house. Seal bottom and sides of ledger.
10. **ALL** Splices in beams shall be over posts
11. Mechanical connection is required between posts and footings to prevent uplift and instability.

12. Provide positive post beam connection between posts and beams (using bolted shoulder cut or approved bracket) **Bolting of beams to sides of post is prohibited.**
13. All fasteners (screws and nails) must be corrosion resistant. Only approved joist hanger nails or screws may be used in joist hangers with all holes filled. (Nails, Screws or other non-approved fasteners are prohibited).
14. MAXIMUM CANTILEVER OF A BEAM PAST A POST CANNOT EXCEED TWELVE (12) INCHES.
15. A special design is required for decks attached to house cantilevers (letter from truss manufacturer or structural engineer).
16. Decks built to support a future porch: require planning for increased beam, joist, post and footing sizes. Beam cantilevers are not permitted; posts shall be at outer edge of deck rims.
17. Stair stringers shall be attached to the deck rim with approved galvanized strapping, adjustable hangers or other approved method.

REQUIRED INSPECTIONS

1. **PRIOR TO DIGGING:** Call Gopher services at (651) 454-0002 or **811** to verify utility locations. A Forty-eight hour notice is required excluding weekends and holidays.
2. **Footing inspection:** After permit is approved and paid for, when all holes are dug, **BUT PRIOR TO POURING OF CONCRETE!**
3. **Framing Inspection:** Only if deck is less than 36 inches above grade.
4. **Final inspection:** When the structure has been completed.

JOIST SIZING CHART A.1

	SOUTHERN YELLOW PINE	WESTERN CEDAR
SIZE	12" OC 16" OC 24" OC	12" OC 16" OC 24" OC
2X6	10'-9" 9'-9" 8'-6"	9'-2" 8'-4" 7'-3"
2X8	14'-2" 12'-10" 11'-0"	12'-1" 11'-0" 9'-2"
2X10	18'-0" 16'-1" 13'-5"	15'-5" 13'-9" 11'-3"
2X12	21'-9" 19'-0" 15'-4"	18'-5" 16'-0" 13'-0"

BEAM AND FOOTING SIZING A.2

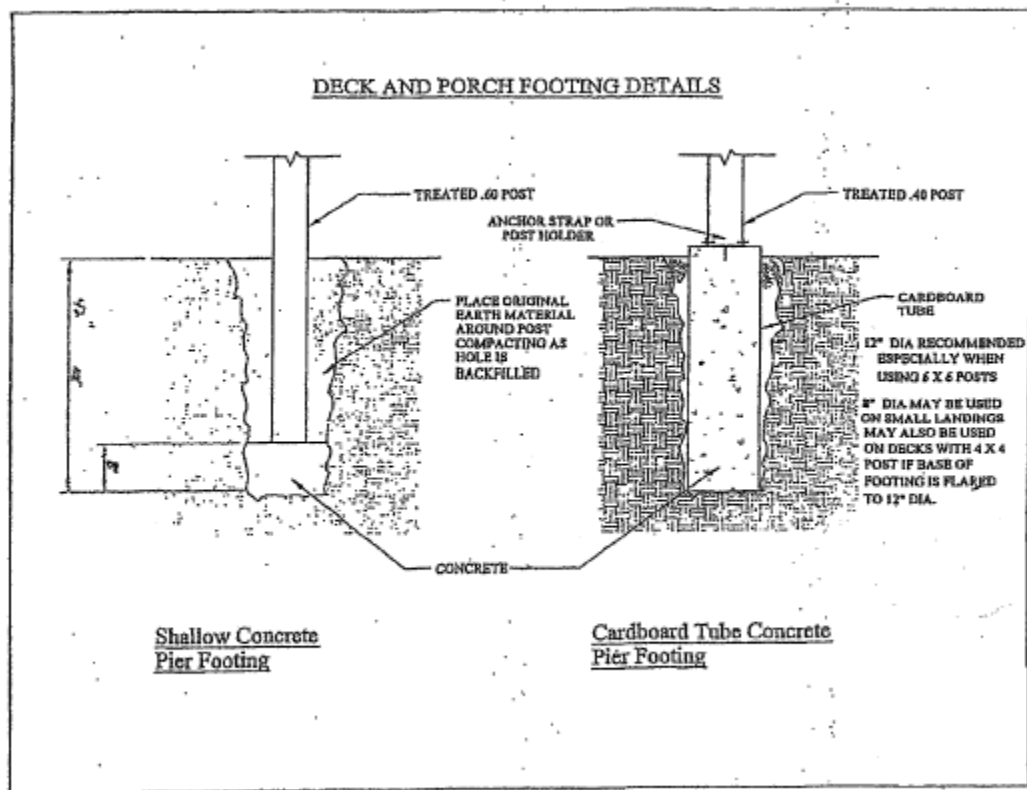
POST SPACING> < JOIST SPACING		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12
	Corner Footing	6"	7"	7"	8"	9"	9"	10"	10"	10"	11"	11"
	Intermediate Footing	9"	10"	10"	11"	12"	13"	14"	14"	15"	15"	16"
7'	Southern Pine Beam	1-2X6	1-2X6	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X10	2-2X10	2-2X10	2-2X12
	Corner Footing	7"	7"	8"	9"	9"	10"	10"	11"	11"	12"	12"
	Intermediate Footing	9"	10"	11"	12"	13"	14"	15"	15"	16"	17"	17"
8'	Southern Pine Beam	1-2X6	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X8	2-2X10	2-2X10	2-2X12	2-2X12
	Corner Footing	7"	8"	9"	9"	10"	10"	11'	11"	12"	13"	13"
	Intermediate Footing	10"	11"	12"	13"	14"	15"	16"	16"	17"	18"	18"
9'	Southern Pine Beam	1-2X6	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X8	2-2X10	2-2X12	2-2X12	3-2X12
	Corner Footing	7"	8"	9"	10"	10"	11"	12'	12"	13"	13"	14"
	Intermediate Footing	10"	12"	13"	14"	15"	16"	17"	17"	18"	19"	20"
10'	Southern Pine Beam	1-2X6	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X10	2-2X10	2-2X12	2-2X12	3-2X10
	Corner Footing	8"	9"	10"	10"	11"	12"	12'	13"	14"	14"	15"
	Intermediate Footing	11"	12"	14"	15"	16"	17"	17"	18"	19"	20"	21"
11'	Southern Pine Beam	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X10	2-2X10	2-2X12	2-2X12	3-2X10	3-2X12
	Corner Footing	8"	9"	10"	11"	12"	12"	13'	14"	14"	15"	15"
	Intermediate Footing	12"	13"	14"	15"	16"	17"	17"	18"	19"	20"	21"
12'	Southern Pine Beam	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X10	2-2X10	2-2X12	3-2X10	3-2X10	3-2X12
	Corner Footing	9"	10"	10"	11"	12"	13"	14'	14"	15"	15"	16"
	Intermediate Footing	12"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"
13'	Southern Pine Beam	1-2X6	2-2X6	2-2X6	2-2X8	2-2X8	2-2X10	2-2X10	2-2X12	3-2X10	3-2X12	3-2X12
	Corner	9"	10"	11"	12"	13"	13"	14'	15"	15"	16"	17"

	Footing Intermediate Footing	13"	14"	15"	17"	18"	19"	20"	21"	22"	23"	24"
14'	Southern Pine Beam	1- 2X6	2- 2X6	2- 2X6	2- 2X8	2- 2X10	2- 2X10	2- 2X12	3- 2X10	3- 2X12	3- 2X12	3- 2X12
	Corner Footing Intermediate Footing	9" 13"	10" 15"	11" 16"	12" 17"	13" 18"	14" 20"	15' 21"	15" 22"	16" 23"	17" 24"	17" 24"
15'	Southern Pine Beam	2- 2X6	2- 2X6	2- 2X8	2- 2X8	2- 2X10	2- 2X12	2- 2X12	3- 2X10	3- 2X12	3- 2X12	Eng. Beam
	Corner Footing Intermediate Footing	10" 14"	11" 15"	12" 17"	13" 18"	14" 19"	14" 20"	15' 21"	16" 22"	17" 23"	17" 24"	18" 25"
16'	Southern Pine Beam	2- 2X6	2- 2X6	2- 2X8	2- 2X8	2- 2X10	2- 2X12	2- 2X12	3- 2X10	3- 2X12	3- 2X12	Eng. Beam
	Corner Footing Intermediate Footing	10" 14"	11" 16"	12" 17"	13" 18"	14" 20"	15" 21"	16' 22"	16" 23"	17" 24"	18" 25"	18" 26"

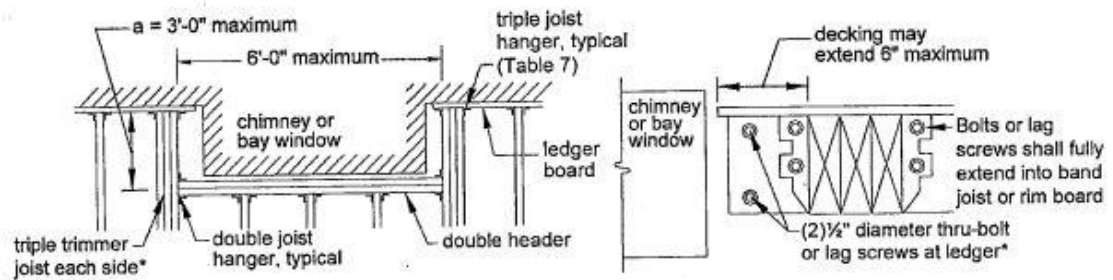
If a future porch is planned, inform the building department at the time of permit application so that sizing of joist, beams and footings can be calculated for the increased loading.

All footing shall be belled at the bottom by 2" to prevent potential frost uplift.

DECK AND PORCH FOOTING DETAILS



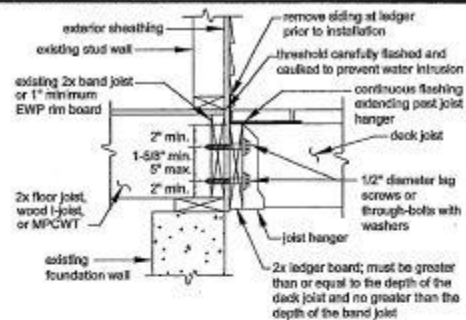
CANTILEVER REINFORCEMENT GUIDELINES



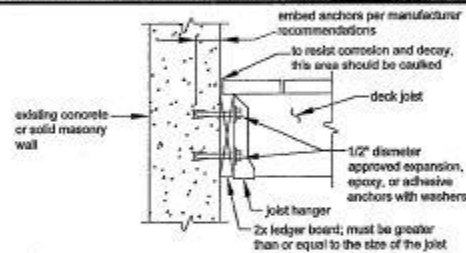
A 4" minimum spacing is required between Cantilever/Bay window and header Assembly, with a 6" maximum allowed.

RIM JOIST DETAIL

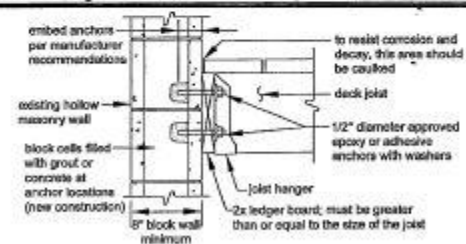
General Attachment of Ledger Board to Band Joist or Rim Board



Attachment of Ledger Board to Foundation Wall (Concrete or Solid Masonry)



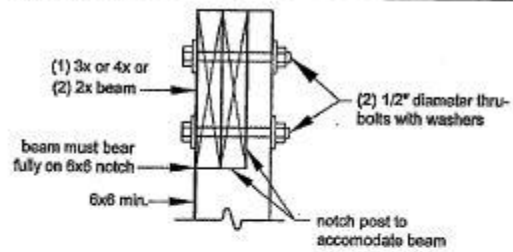
Attachment of Ledger Board to Foundation Wall (Hollow Masonry)



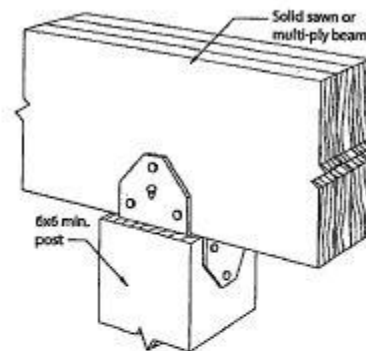
Only 2 -3/8" galvanized lag screws 16" on center or other code approved fasteners are allowed

POST TO BEAM ATTACHMENT DETAIL

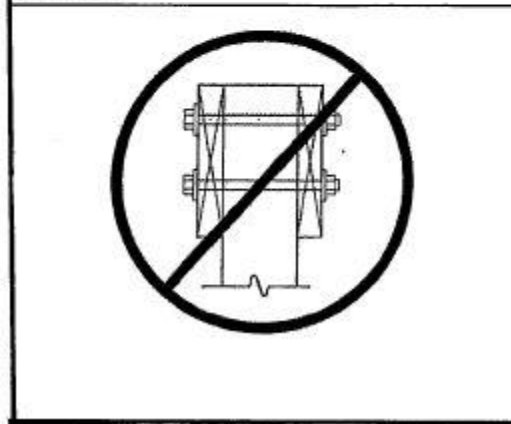
Post-to-Beam Attachment Requirements



Alternate Approved Post-to-Beam Post Cap Attachment



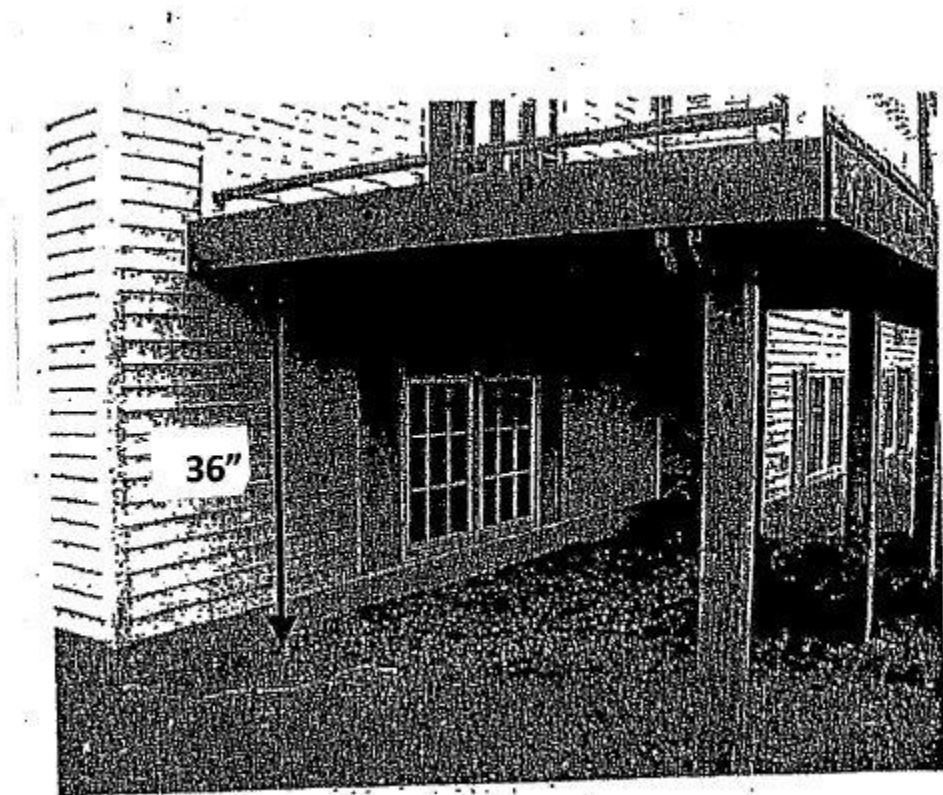
Prohibited Post-to-Beam Attachment Condition



0 x 11.00 in

EMERGENCY ESCAPE AND RESCUE

A minimum ceiling height of 36 inches shall be maintained above the exterior grade from the exterior wall to a public way



SIMPLE DECK DRAWING

Complete this form

Simple Deck Drawing

Deck Size: X

Joisting Size: X

Post Size: X

Post Spacing:

Beam Size: X

Joist Size: X

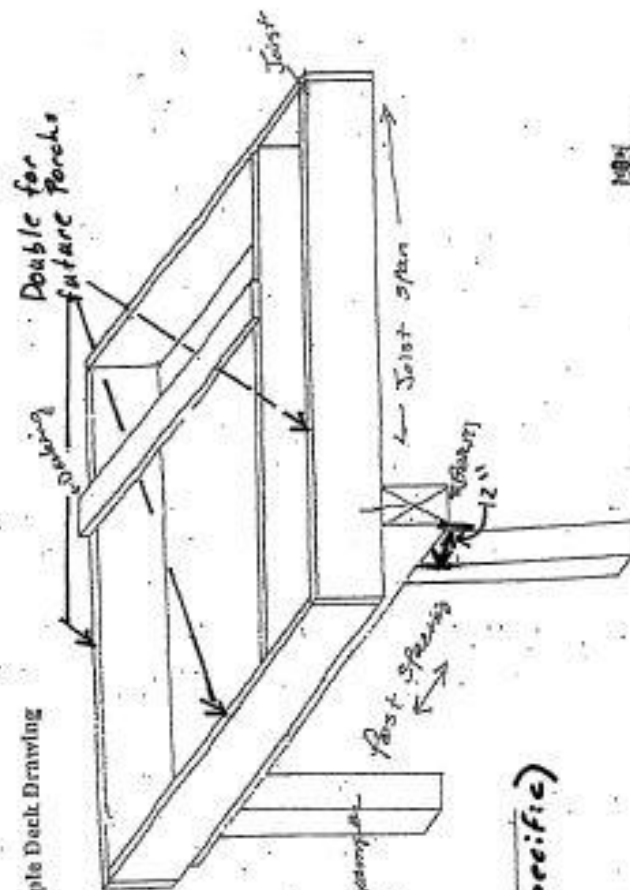
Joist Spacing:

Joist Span:

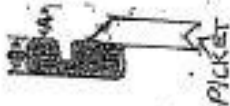
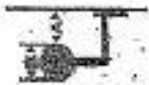
Decking Size: X

Material Type:

(must be Product Specific)

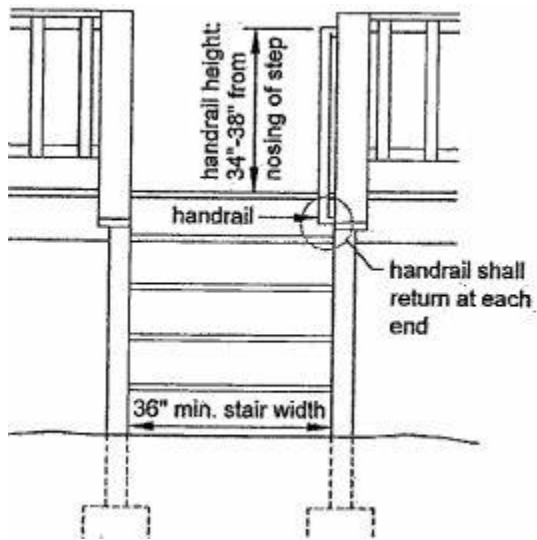


CIRCLE TYPE OF RAILING:



A 2 1/2\"/>

STAIR CONSTRUCTION GUIDELINES



All hand rails shall be returned to the posts as shown is image above

All Decks, Stairs and Platforms require a building permit.

Free standing, attached and detached, with or without footings require a building permit from the City of Shakopee, Building Department

STAIR CONSTRUCTION GUIDELINES

1. Maximum Riser Height is 7-3/4 inches
2. Minimum Tread Depth is 10 inches
3. Stair treads and risers cannot vary in measurement greater than 3/8 inch
4. A Minimum of Three (3) stair jacks are required. Stair jacks shall be securely fastened to the deck platform with lag screws, joist hangers of correct size or by strapping.
5. The backs of risers shall be protected so that a four (4") inch sphere cannot pass through.
6. Stairs with four (4) or more risers require a graspable/grip able hand rail the full length of the stairs and must be continuous with no obstructions. The handrail shall be installed between the heights of thirty four (34") inches to the bottom and thirty eight (38") inches to the top.
7. Hand rails shall be returned into a wall or post at the bottom and top of the stairs.
8. Stairs that go to a height greater than thirty (30) inches from bottom to top require a guard on all open sides of the stairs. Guards shall be designed and built so that a four (4") inch sphere cannot pass through and the triangular portion where the guard meets the stair tread and riser shall be designed and built so that a six(6") inch sphere cannot pass through.